

C5671 Log Data Report

Borehole Information:

Borehole:			C5671	Site:		100 BC Area	
Coordinates (WA St Plane)		GWL¹ (ft):		67.7	GWL Date:		07/26/07
North (m)	East (m)	Drill Date	TOC Elevation		Total Depth (ft)	Type	
Not available	Not available	07/07	Not available		89	Cable	

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Threaded Steel	0.9	8 5/8	7 5/8	1/2	0.9	89

Borehole Notes:

Casing diameter and casing stickup measurements were acquired by the logging engineer using a caliper and steel tape. Measurements were rounded to the nearest 1/16 in.

This borehole was drilled at the bottom of an approximate 15 ft deep excavation. The zero ft reference point for log data is the ground surface at the bottom of the 15 ft excavation.

Logging Equipment Information:

Logging System:	Gamma 4 E		Type:	SGLS (70%)
Effective Calibration Date	05/17/07	Calibration Reference:	Serial No.:	34TP40587A
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Logging System:	Gamma 4 H		Type:	NMLS
Effective Calibration Date	11/22/06	Calibration Reference:	Serial No.:	H310700352
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat			
Date	07/27/07	07/27/07			
Logging Engineer	Pearson	Pearson			
Start Depth (ft)	88.0	9.0			
Finish Depth (ft)	0.0	0.0			
Count Time (sec)	100	100			
Live/Real	R	R			
Shield (Y/N)	N	N			
MSA Interval (ft)	1.0	1.0			
ft/min	N/A ²	N/A			
Pre-Verification	DEG31CAB	DEG31CAB			
Start File	DEG31000	DEG31089			
Finish File	DEG31088	DEG31098			
Post-Verification	DEG31CAA	DEG31CAA			
Depth Return Error (in.)	0	0			
Comments	No fine gain adjustment	No fine gain adjustment			

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	3	4 Repeat			
Date	07/27/07	07/27/07			
Logging Engineer	Pearson	Pearson			
Start Depth (ft)	0.0	0.0			
Finish Depth (ft)	67.0	7.0			
Count Time (sec)	15	15			
Live/Real	R	R			
Shield (Y/N)	N	N			
Sample Interval (ft)	0.25	0.25			
ft/min	N/A	N/A			
Pre-Verification	DH612CAB	DH612CAB			
Start File	DH612000	DH612269			
Finish File	DH612268	DH612297			
Post-Verification	DH612CAA	DH612CAA			
Depth Return Error (in.)	+ 1	0			
Comments	None	None			

Logging Operation Notes:

Logging was conducted with a centralizer on the sondes. Repeat sections were collected in this borehole to evaluate system performance.

Analysis Notes:

Analyst:	Henwood	Date:	11/15/07	Reference:	GJO-HGLP 1.6.3, Rev. 0
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Pre-run and post-run verifications for the logging systems were performed before and after the day's data acquisition. The acceptance criteria were met.

A casing correction for 0.5-in.-thick casing was applied to the SGLS log data. There is no valid calibration for the neutron moisture data in a 7 5/8-in. borehole. Therefore, the data are plotted in counts per second and no correction factors are applied.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with an EXCEL worksheet template identified as G4EMay07.xls using efficiency functions and corrections for casing, water, and dead time as determined from annual calibrations. No corrections for dead time were necessary. A correction for water inside the casing is applied to the data below 68 ft.

Results and Interpretations:

No gamma emitting manmade radionuclides were detected. The minimum detection limit (MDL) is plotted for Cs-137.

The KUT and moisture data indicate some variation.

The SGLS and moisture repeat logs show good repeatability.

List of Log Plots:

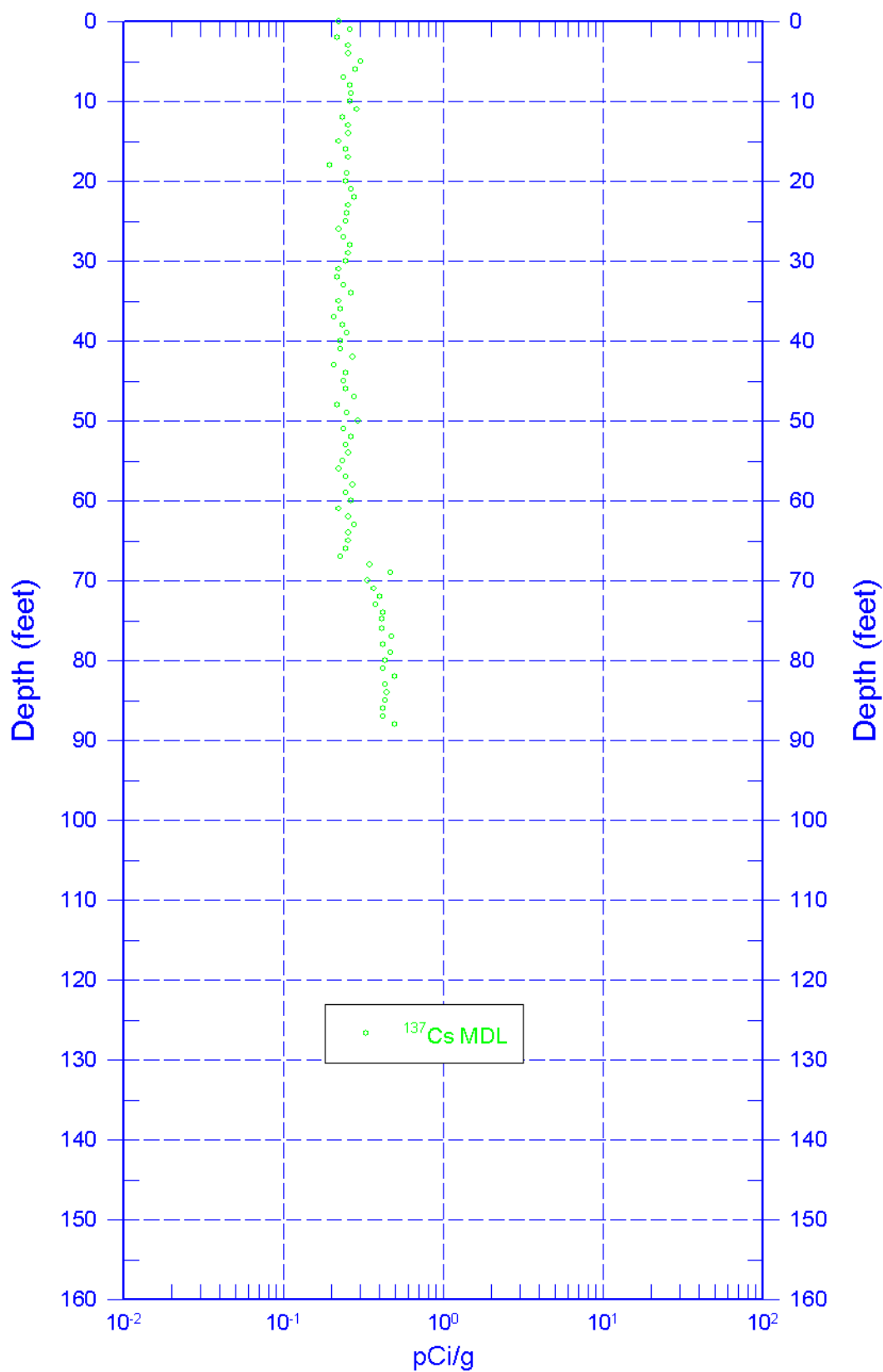
Depth Reference is ground surface

Manmade Radionuclides
Natural Gamma Logs
Combination Plot

Total Gamma and Dead Time
Moisture
Moisture Repeat Section
Repeat Section of Natural Gamma Logs

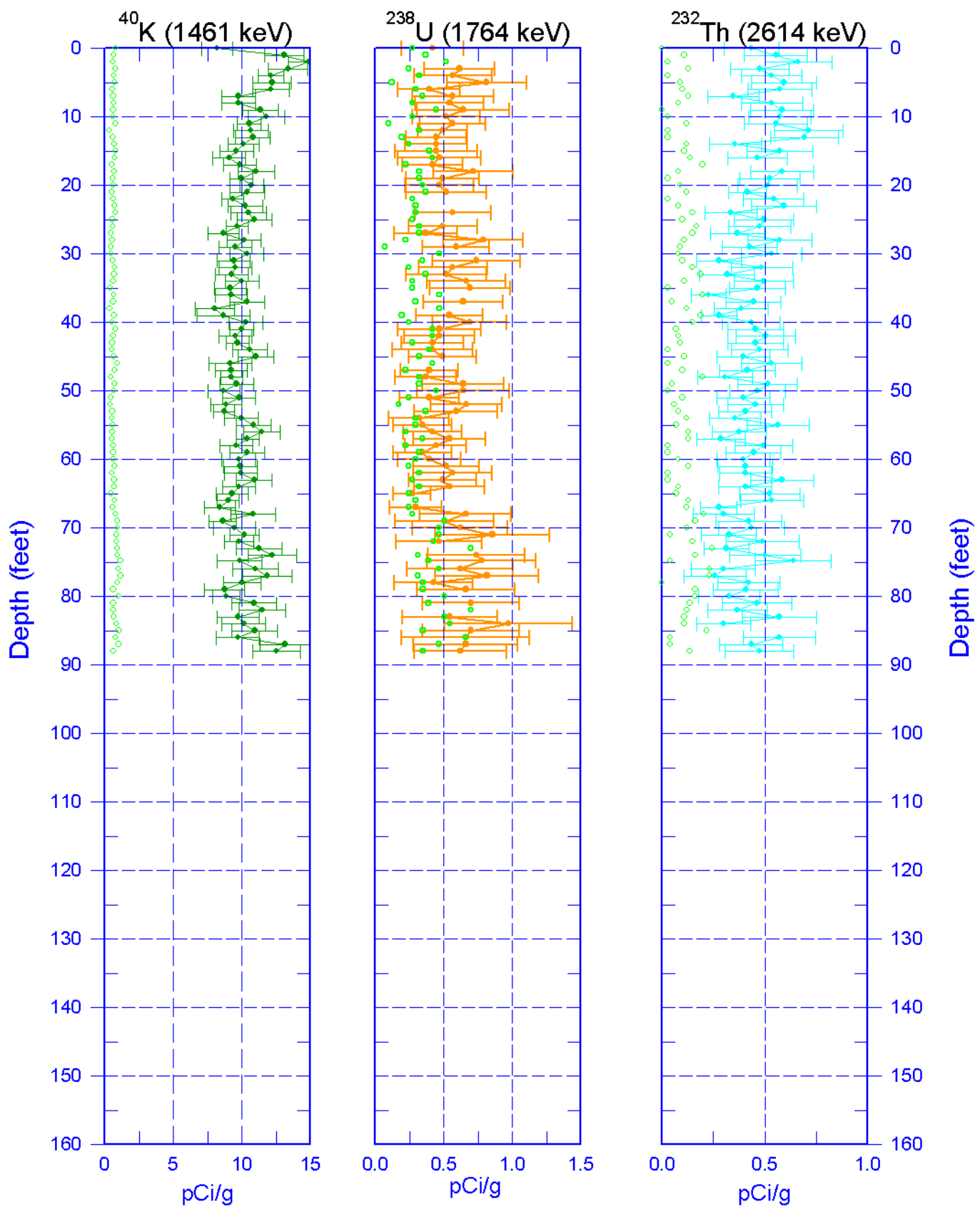
¹ GWL – groundwater level

C5671 Man-Made Radionuclides



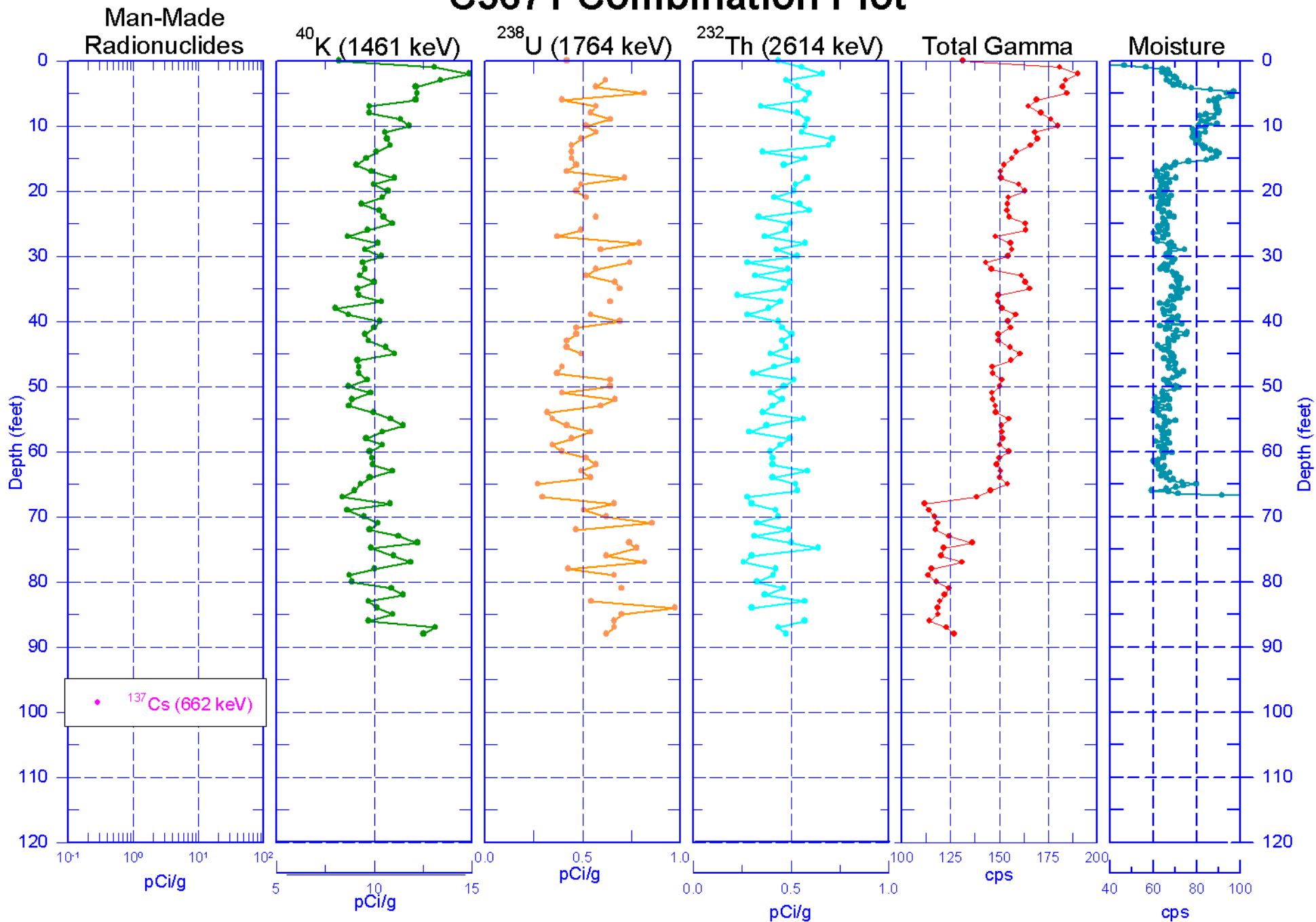
Zero Reference - ground surface

C5671
Natural Gamma Logs



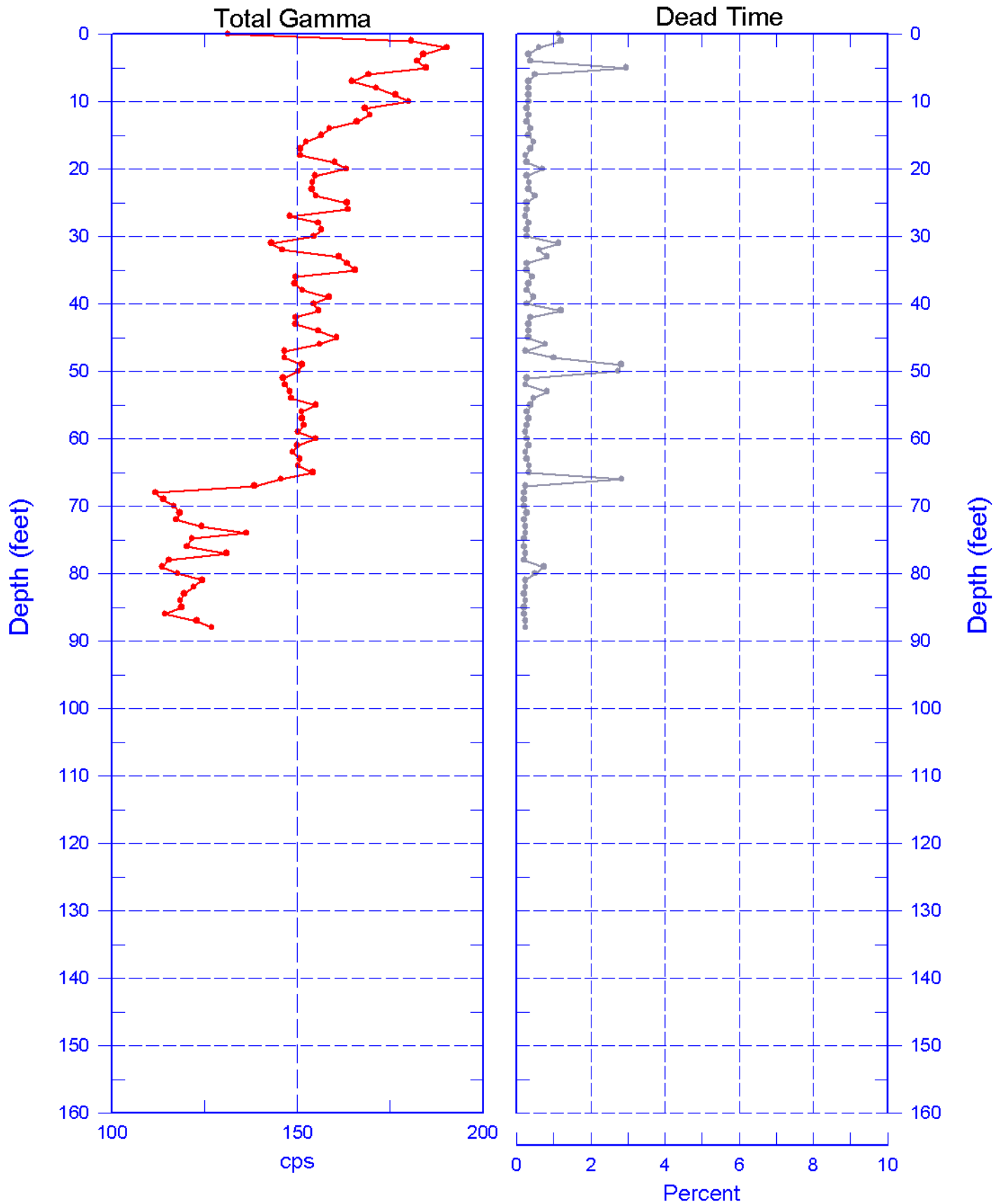
Zero Reference = ground surface

C5671 Combination Plot

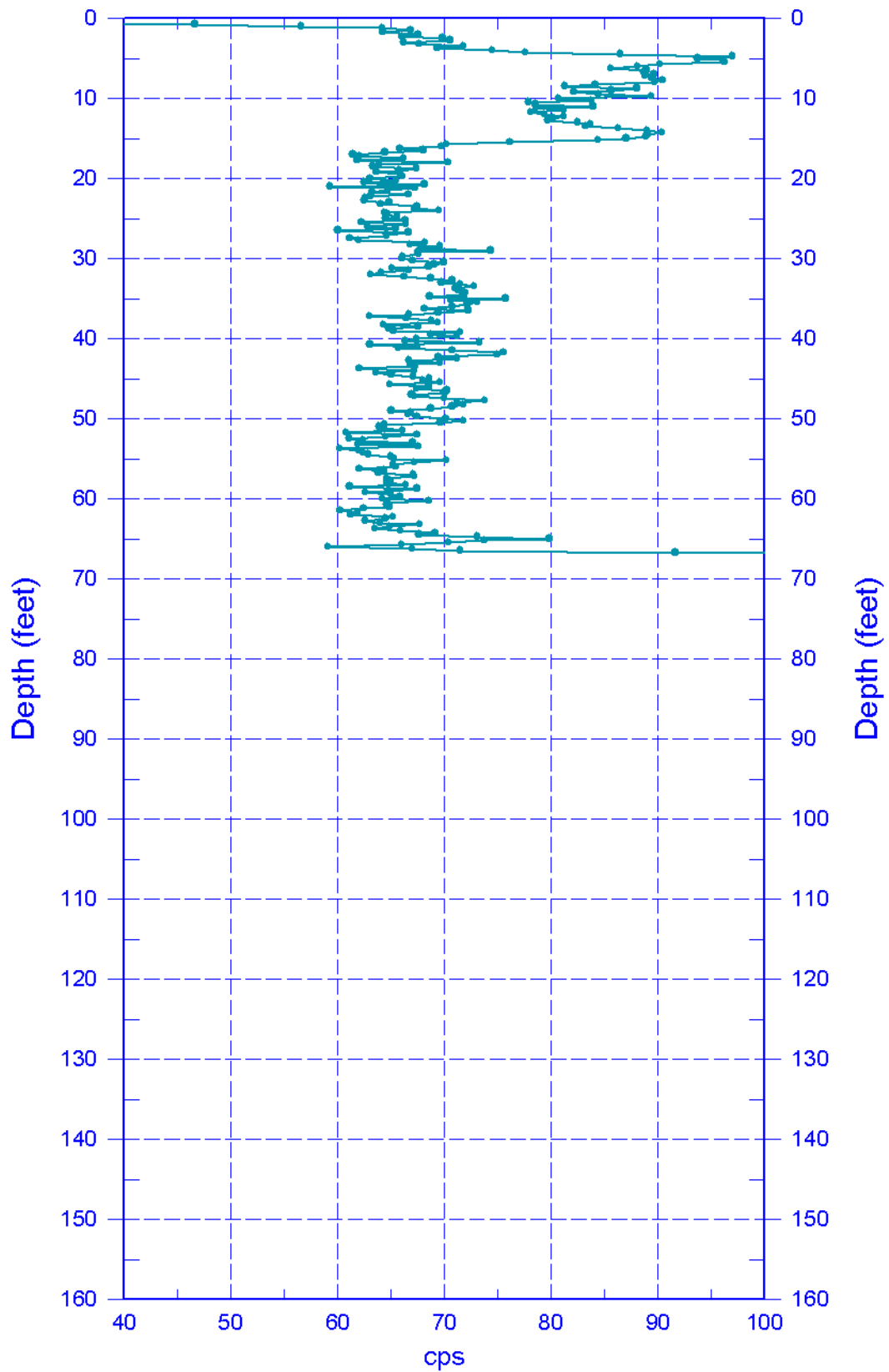


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Total Gamma & Dead Time

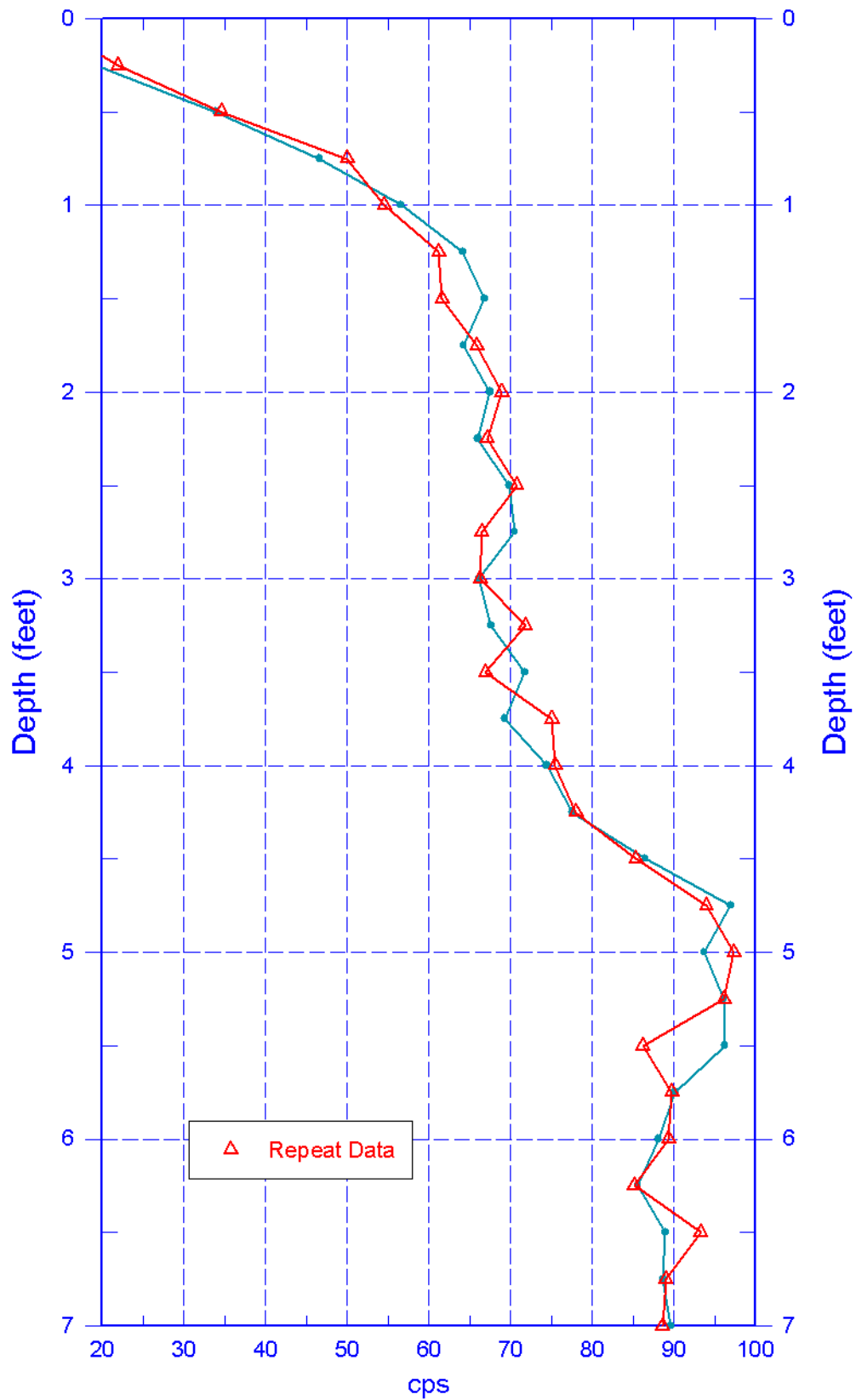


C5671 Moisture



Zero Reference - ground surface

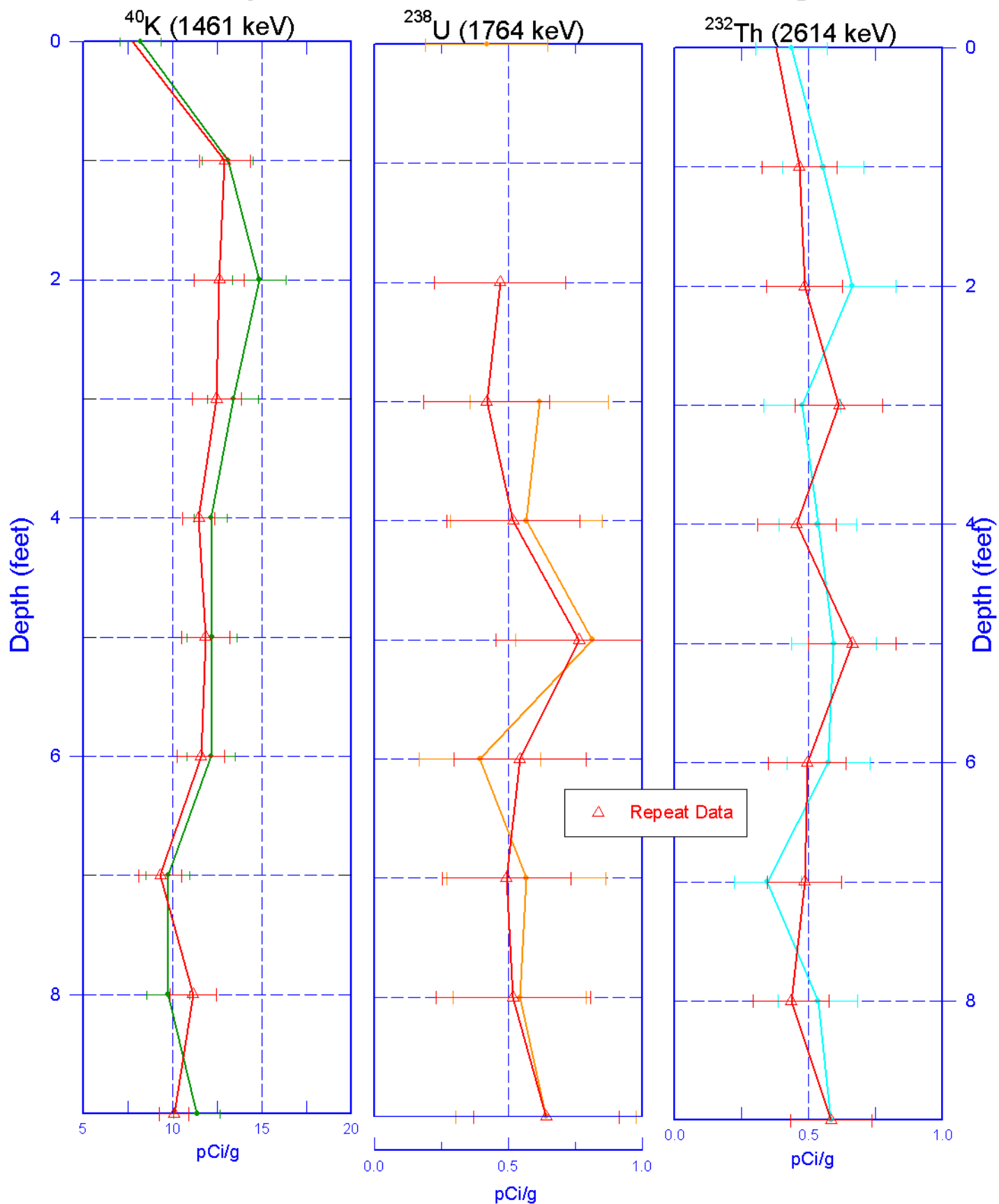
C5671 Moisture Repeat Section



Zero Reference - ground surface

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Repeat Section of Natural Gamma Logs



Zero Reference - ground surface